

SEQUENCE LISTING

<110> Ruelle, Jean-Louis
Thonnard, Joelle

<120> Novel Compounds

<130> BM45348

<150> PCT/EP00/00135
<151> 2000-01-10

<160> 16

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 804
<212> DNA
<213> Neisseria meningitidis

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gaagcccagg acgaattgaa cagcagcaat tatacgcggg ctgtcaagtt atacgaaatc 180
ttgaaatgcg gcttcccac cagccgccat gcccggcaat cccaactgga taccgcatac 240
gcctattata aagacgatga aaaagacaag gctctggcgg caatcgaacg cttccgccc 300
ctccatccgc agcatccgaa tatggattac ggcgtgtatc tgccggctt ggtgctgttc 360
aacgaagacc agtccttctt gaacaaactg gcctcgcaag actggtccga cccgacccg 420
aaagccaacc gcgaagtaac ccaggcgttt gcggaactcg tccaacgctt ccccaacagc 480
aaatacgccg ccgatgcgac cgacgcatg gtcaaactgg tcgatgcact gggcggcaat 540
gaaatgtcg tggcgcgcta ctacatgaaa cgcggcgcat atatcgccgc cgccaaccgc 600
gccccaaaaa ttatcgccag ctacaaaaat acacgctatg tcgaagaatc gctcgccatc 660
ttggaacttg cctacaaaaa actcggcaaa ccacagctt ccgcccatac gcccggcgtg 720
ttggaacca acttccgaa aagcccgtt ttgacgcacg cttggcagcc cgacgatatg 780
ccttgggtggc gttactggca ttaa 804

<210> 2
<211> 267
<212> PRT
<213> Neisseria meningitidis

<400> 2
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Cys Ala Thr Gln Gly Thr Val Asp Lys Asp Ala Gln Ile Thr Gln Asp
20 25 30
Trp Ser Val Glu Lys Leu Tyr Ala Glu Ala Gln Asp Glu Leu Asn Ser
35 40 45
Ser Asn Tyr Thr Arg Ala Val Lys Leu Tyr Glu Ile Leu Glu Ser Arg
50 55 60
Phe Pro Thr Ser Arg His Ala Arg Gln Ser Gln Leu Asp Thr Ala Tyr
65 70 75 80
Ala Tyr Tyr Lys Asp Asp Glu Lys Asp Lys Ala Leu Ala Ile Glu
85 90 95
Arg Phe Arg Arg Leu His Pro Gln His Pro Asn Met Asp Tyr Ala Leu
100 105 110
Tyr Leu Arg Gly Leu Val Leu Phe Asn Glu Asp Gln Ser Phe Leu Asn
115 120 125
Lys Leu Ala Ser Gln Asp Trp Ser Asp Arg Asp Pro Lys Ala Asn Arg

130	135	140	
Glu Val Thr Gln Ala	Phe Ala Glu Leu Val	Gln Arg Phe Pro Asn Ser	
145	150	155	160
Lys Tyr Ala Ala Asp Ala	Thr Ala Arg Met	Val Lys Leu Val Asp Ala	
165	170	175	
Leu Gly Gly Asn Glu Met Ser Val Ala Arg Tyr Tyr Met	Lys Arg Gly		
180	185	190	
Ala Tyr Ile Ala Ala Ala Asn Arg Ala Gln Lys Ile Ile Gly Ser Tyr			
195	200	205	
Gln Asn Thr Arg Tyr Val Glu Glu Ser Leu Ala Ile Leu Glu Leu Ala			
210	215	220	
Tyr Gln Lys Leu Gly Lys Pro Gln Leu Ala Ala Asp Thr Arg Arg Val			
225	230	235	240
Leu Glu Thr Asn Phe Pro Lys Ser Pro Phe Leu Thr His Ala Trp Gln			
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Pro Asp Asp Met Pro Trp Trp Arg Tyr Trp His			
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<210> 3
<211> 1404
<212> DNA
<213> Neisseria meningitidis
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<210> 4
<211> 467
<212> PRT
<213> *Neisseria meningitidis*

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Ala Leu Ser Ala Cys Thr Met Ile Pro Gln Tyr Glu Gln Pro Lys Val
      20          25          30
Glu Val Ala Glu Thr Phe Lys Asn Asp Thr Ala Asp Ser Gly Ile Arg
      35          40          45
Ala Val Asp Leu Gly Trp His Asp Tyr Phe Ala Asp Pro Arg Leu Gln

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50	55	60													
Lys	Leu	Ile	Asp	Ile	Ala	Leu	Glu	Arg	Asn	Thr	Ser	Leu	Arg	Thr	Ala
65				70			75						80		
Val	Leu	Asn	Ser	Glu	Ile	Tyr	Arg	Lys	Gln	Tyr	Met	Ile	Glu	Arg	Asn
				85			90						95		
Asn	Leu	Leu	Pro	Thr	Leu	Ala	Ala	Asn	Ala	Asn	Gly	Ser	Arg	Gln	Gly
				100			105						110		
Ser	Leu	Ser	Gly	Gly	Asn	Val	Ser	Ser	Ser	Tyr	Asn	Val	Gly	Leu	Gly
				115			120						125		
Ala	Ala	Ser	Tyr	Glu	Leu	Asp	Leu	Phe	Gly	Arg	Val	Arg	Ser	Ser	Ser
				130			135						140		
Glu	Ala	Ala	Leu	Gln	Gly	Tyr	Phe	Ala	Ser	Val	Ala	Asn	Arg	Asp	Ala
145				150						155			160		
Ala	His	Leu	Ser	Leu	Ile	Ala	Thr	Val	Ala	Lys	Ala	Tyr	Phe	Asn	Glu
				165						170			175		
Arg	Tyr	Ala	Glu	Glu	Ala	Met	Ser	Leu	Ala	Gln	Arg	Val	Leu	Lys	Thr
				180						185			190		
Arg	Glu	Glu	Thr	Tyr	Lys	Leu	Ser	Glu	Leu	Arg	Tyr	Lys	Ala	Gly	Val
				195				200				205			
Ile	Ser	Ala	Val	Ala	Leu	Arg	Gln	Gln	Glu	Ala	Leu	Ile	Glu	Ser	Ala
210					215							220			
Lys	Ala	Asp	Tyr	Ala	His	Ala	Ala	Arg	Ser	Arg	Glu	Gln	Ala	Arg	Asn
225					230					235			240		
Ala	Leu	Ala	Thr	Leu	Ile	Asn	Gln	Pro	Ile	Pro	Glu	Asp	Leu	Pro	Ala
				245					250			255			
Gly	Leu	Pro	Leu	Asp	Lys	Gln	Phe	Phe	Val	Glu	Lys	Leu	Pro	Ala	Gly
				260				265				270			
Leu	Ser	Ser	Glu	Val	Leu	Leu	Asp	Arg	Pro	Asp	Ile	Arg	Ala	Ala	Glu
				275				280				285			
His	Ala	Leu	Lys	Gln	Ala	Asn	Ala	Asn	Ile	Gly	Ala	Ala	Arg	Ala	Ala
				290				295				300			
Phe	Phe	Pro	Ser	Ile	Arg	Leu	Thr	Gly	Thr	Val	Gly	Thr	Gly	Ser	Ala
305					310				315				320		
Glu	Leu	Gly	Gly	Leu	Phe	Lys	Ser	Gly	Thr	Gly	Val	Trp	Ser	Phe	Ala
				325				330					335		
Pro	Ser	Ile	Thr	Leu	Pro	Ile	Phe	Thr	Trp	Gly	Thr	Asn	Lys	Ala	Asn
				340				345					350		
Leu	Asp	Val	Ala	Lys	Leu	Arg	Gln	Gln	Ala	Gln	Ile	Val	Ala	Tyr	Glu
				355				360				365			
Ala	Ala	Val	Gln	Ser	Ala	Phe	Gln	Asp	Val	Ala	Asn	Ala	Leu	Ala	Ala
				370				375				380			
Arg	Glu	Gln	Leu	Asp	Lys	Ala	Tyr	Asp	Ala	Leu	Ser	Lys	Gln	Ser	Arg
385					390				395				400		
Ala	Ser	Lys	Glu	Ala	Leu	Arg	Leu	Val	Gly	Leu	Arg	Tyr	Lys	His	Gly
				405				410					415		
Val	Ser	Gly	Ala	Leu	Asp	Leu	Leu	Asp	Ala	Glu	Arg	Ser	Ser	Tyr	Ala
				420				425				430			
Ala	Glu	Gly	Ala	Ala	Leu	Ser	Ala	Gln	Leu	Thr	Arg	Ala	Glu	Asn	Leu
				435				440				445			
Ala	Asp	Leu	Tyr	Lys	Ala	Leu	Gly	Gly	Leu	Lys	Arg	Asp	Thr	Gln	
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Thr	Asp	Lys													
465															

<210> 5
<211> 420
<212> DNA
<213> Neisseria meningitidis

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aatgtcgccg ggttgatgggt tggaaatgccc caggagaaac gttctgtcgt tggcagggtt

60
120

cccgcgacaa	ataaccgct	ttccgatacg	gtagctgtcg	gaatgattaa	aacatccggt	180
tcgccttcgg	catcaaatat	gattgaaatg	ctcggcgccg	acaatatcaa	cgtcgccgtg	240
gtgggaagca	gccaaatgct	taataaggcg	accgacttt	attccttaaa	ccatgcaaag	300
aaagtccgaa	ataatgtcag	tgtttatatg	atggcgaca	gcaaagtga	caaggccgat	360
ttgaaaacg	cggcaaatgc	caaaaatatc	aaattgcatt	atttcttaa	ccaaaataa	420

<210> 6
 <211> 139
 <212> PRT
 <213> Neisseria meningitidis

<400> 6

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Ala	Thr	Gly	Val	Asn	Val	Gly	Arg	Leu	Met	Val	Glu	Met	Pro	Gln	Gly
			20				25				30				
Glu	Arg	Ser	Val	Val	Val	Gln	Val	Pro	Ala	Thr	Asn	Asn	Pro	Leu	Ser
			35				40				45				
Asp	Thr	Val	Ala	Val	Gly	Met	Ile	Lys	Thr	Ser	Gly	Ser	Pro	Ser	Ala
			50				55				60				
Ser	Asn	Met	Ile	Glu	Met	Leu	Gly	Ala	Asp	Asn	Ile	Asn	Val	Gly	Val
			65				70				75			80	
Val	Gly	Ser	Ser	Gln	Met	Leu	Asn	Lys	Ala	Thr	Ala	Leu	Tyr	Ser	Leu
					85					90			95		
Asn	His	Ala	Lys	Lys	Val	Gly	Asn	Asn	Val	Ser	Val	Tyr	Met	Met	Gly
					100					105			110		
Asp	Ser	Glu	Ser	Asp	Lys	Ala	Asp	Leu	Glu	Asn	Ala	Ala	Asn	Ala	Lys
					115					120			125		
Asn	Ile	Lys	Leu	His	Tyr	Phe	Phe	Asn	Gln	Lys					
					130					135					

<210> 7
 <211> 516
 <212> DNA
 <213> Neisseria meningitidis

<400> 7

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gcctgcgcaa	ccaaaagcaa	cgtcaaagcc	gacggAACGA	ccgacaaatcc	ggttttcccg	120
aaaccctatt	ccgtaacgct	cgacaacaat	cgcggtacat	tcccgaccta	tgacgaattg	180
gacttgcgtc	gtcccgtct	gaccaaaagac	gacatctaca	aaatcctggg	tcgtccgc	240
tacgacgaag	gtatgtacgg	cgtgcgcgaa	tgggattatc	tgttccactt	ccacaccccg	300
ggcgttaggca	tcgaccctga	aaacacttcc	ggcgttagaag	gcattaccac	ctgtcaatac	360
aaaattattt	tcgataaaga	caaatttgcc	cgcagttct	actggaaGCC	cgtcttcccg	420
aaagatgccg	cctgtccgcc	gcccgacccc	aaaggcgagc	cgcaagtcat	catccgcgaa	480
atcggtcccg	ccaaacccaa	acgcattccgc	caataaa			516

<210> 8
 <211> 171
 <212> PRT
 <213> Neisseria meningitidis

<400> 8

Met	Lys	Ile	Lys	Gln	Ile	Val	Lys	Pro	Gly	Leu	Ala	Val	Leu	Ala	Ala
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Gly	Val	Leu	Ser	Ala	Cys	Ala	Thr	Lys	Ser	Asn	Val	Lys	Ala	Asp	Gly
						20		25			30				
Thr	Thr	Asp	Asn	Pro	Val	Phe	Pro	Lys	Pro	Tyr	Ser	Val	Thr	Leu	Asp
						35		40			45				
Asn	Asn	Arg	Gly	Thr	Phe	Pro	Thr	Tyr	Asp	Glu	Leu	Asp	Leu	Met	Arg
						50		55			60				
Pro	Gly	Leu	Thr	Lys	Asp	Asp	Ile	Tyr	Lys	Ile	Leu	Gly	Arg	Pro	His

65	70	75	80
Tyr Asp Glu Gly Met Tyr Gly Val Arg	Glu Trp Asp Tyr	Leu Phe His	
85	90	95	
Phe His Thr Pro Gly Val Gly Ile Asp	Pro Glu Asn Thr	Ser Gly Val	
100	105	110	
Glu Gly Ile Thr Thr Cys Gln Tyr Lys	Ile Ile Phe Asp	Lys Asp Lys	
115	120	125	
Phe Ala Arg Ser Phe Tyr Trp Asn Pro Val	Phe Pro Lys Asp Ala Ala		
130	135	140	
Cys Pro Pro Pro Ala Pro Lys Ala Glu Pro	Gln Val Ile Ile Arg Glu		
145	150	155	160
Ile Val Pro Ala Lys Pro Lys Arg Ile Arg	Gln		
165	170		.

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<210> 9
<211> 816
<212> DNA
<213> Neisseria meningitidis
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caggctaaag aacaaaccag tttcaacaat cccgagccaa tgacaggatt tgaacatacg 180
gttacatttgc attttcaggg caccaaaatg gttatccctt atggctatct tgacacggtat 240
acgcaagaca atgcccacaaa atggcttcc gacacgccccg ggcaggatgc ttactccatt 300
aatttgatag agatttagcgt ctattacaaa aaaaccgacc aaggctgggt tcttgagcca 360
tacaaccaggc aaaacacaaggc acacttttac caatttctac gcgacgggtt ggatagcgtg 420
gacgatattg ttatccgaaa agatgcgtgt agtttaagta cgactatggg agaaagattg 480
cttacttacg gggttaaaaaa aatgccatct gcctatcctg aatacgaggg ttatgaagat 540
aaaagacata ttccctgaaaaa tccatatttt catgaatttt actatattaa aaaaggagaa 600
aatccggcga ttattactca tcggaataat cgaataaaacc aaactgaaga agatagttat 660
agcactagcg taggttccctg tattaacggt ttccacgggtac agtattaccc gtttattcgg 720
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<210> 10
<211> 271
<212> PRT
<213> *Neisseria meningitidis*

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Gly Ser Val Phe Thr Met Thr Ser Cys Glu Pro Val Asn Glu Lys Thr
      20          25          30
2
Asp Gln Lys Ala Val Ser Ala Gln Gln Ala Lys Glu Gln Thr Ser Phe
      35          40          45
3
Asn Asn Pro Glu Pro Met Thr Gly Phe Glu His Thr Val Thr Phe Asp
      50          55          60
4
Phe Gln Gly Thr Lys Met Val Ile Pro Tyr Gly Tyr Leu Ala Arg Tyr
      65          70          75          80
5
Thr Gln Asp Asn Ala Thr Lys Trp Leu Ser Asp Thr Pro Gly Gln Asp
      85          90          95
6
Ala Tyr Ser Ile Asn Leu Ile Glu Ile Ser Val Tyr Tyr Lys Lys Thr
      100         105         110
7
Asp Gln Gly Trp Val Leu Glu Pro Tyr Asn Gln Gln Asn Lys Ala His
      115         120         125
8
Phe Ile Gln Phe Leu Arg Asp Gly Leu Asp Ser Val Asp Asp Ile Val
      130         135         140
9
Ile Arg Lys Asp Ala Cys Ser Leu Ser Thr Thr Met Gly Glu Arg Leu
145          150          155          160
10
Leu Thr Tyr Gly Val Lys Lys Met Pro Ser Ala Tyr Pro Glu Tyr Glu

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	165	170	175												
Ala	Tyr	Glu	Asp	Lys	Arg	His	Ile	Pro	Glu	Asn	Pro	Tyr	Phe	His	Glu
	180		185		190										
Phe	Tyr	Tyr	Ile	Lys	Lys	Gly	Glu	Asn	Pro	Ala	Ile	Ile	Thr	His	Arg
	195		200		205										
Asn	Asn	Arg	Ile	Asn	Gln	Thr	Glu	Glu	Asp	Ser	Tyr	Ser	Thr	Ser	Val
	210		215		220										
Gly	Ser	Cys	Ile	Asn	Gly	Phe	Thr	Val	Gln	Tyr	Tyr	Pro	Phe	Ile	Arg
	225		230		235										240
Glu	Lys	Gln	Gln	Leu	Thr	Gln	Gln	Glu	Leu	Val	Gly	Tyr	His	Gln	Gln
	245		250		255										
Val	Glu	Gln	Leu	Val	Gln	Ser	Phe	Val	Asn	Asn	Ser	Asn	Lys	Lys	
	260		265		270										

<210> 11
<211> 717
<212> DNA
<213> Neisseria meningitidis

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gacgcttattc cctatcccgt tcccactctg caagaccgtt tggattatct ggaaggcaca	240
ctcgccgc tgtcgaacga agtggaaacc ttaaacggca aagtcaaagc actggagcat	300
gcgaaaacac acccttccgg tagggcatac gtccaaaaac tcgacgaccg caagttgaaa	360
gagcattacc tcaataccga aggcggcagc gcatccgcac ataccgtcga aaccgcacaa	420
aacctctaca atcaggcact caaacactat aaaagcggca ggttttctgc cgcaagccgc	480
ctgttgaag gcgcggacgg aggcgacggc ggcagcatcg cgcaacgcag tatgtacctg	540
ttgctgcaaa gcagggcgcg tatggcaac tgcgaatccg tcatcgaaat cggagggcgt	600
tacgccaacc gtttcaaaga cagcccaacc gcgcggaaag ccatgttcaa aatcggcga	660
tgccaataca gtttgcagca gaaagacatt gcaaggcga cttggcgcag cctgatacag	717
gcttacccga gcagccggc ggcaaaacgc gccggcgcag ccgtacgcaa acgata	

<210> 12
<211> 238
<212> PRT
<213> Neisseria meningitidis

<400> 12	
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Pro Gln Ala Glu Ala Gly Ser Ser Asp Ala Ile Pro Tyr Pro Val Pro	
35 40 45	
Thr Leu Gln Asp Arg Leu Asp Tyr Leu Glu Gly Thr Leu Val Arg Leu	
50 55 60	
Ser Asn Glu Val Glu Thr Leu Asn Gly Lys Val Lys Ala Leu Glu His	
65 70 75 80	
Ala Lys Thr His Pro Ser Gly Arg Ala Tyr Val Gln Lys Leu Asp Asp	
85 90 95	
Arg Lys Leu Lys Glu His Tyr Leu Asn Thr Glu Gly Gly Ser Ala Ser	
100 105 110	
Ala His Thr Val Glu Thr Ala Gln Asn Leu Tyr Asn Gln Ala Leu Lys	
115 120 125	
His Tyr Lys Ser Gly Arg Phe Ser Ala Ala Ala Leu Leu Lys Gly	
130 135 140	
Ala Asp Gly Gly Asp Gly Gly Ser Ile Ala Gln Arg Ser Met Tyr Leu	
145 150 155 160	
Leu Leu Gln Ser Arg Ala Arg Met Gly Asn Cys Glu Ser Val Ile Glu	
165 170 175	
Ile Gly Gly Arg Tyr Ala Asn Arg Phe Lys Asp Ser Pro Thr Ala Pro	

180	185	190
Glu Ala Met Phe Lys Ile Gly Glu Cys Gln Tyr Arg Leu Gln Gln Lys		
195	200	205
Asp Ile Ala Arg Ala Thr Trp Arg Ser Leu Ile Gln Ala Tyr Pro Ser		
210	215	220
Ser Pro Ala Ala Lys Arg Ala Ala Ala Val Arg Lys Arg		
225	230	235

<210> 13
<211> 1176
<212> DNA
<213> Neisseria meningitidis

<400> 13

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caacaatctg aagttcaaat tcctgaagtg gagctgattt atgtgaatca tacgggtgct	180
cagttattat ataaggctca gataaatca tcattcactc agttggcga tggatgtct	240
tcggctggta cgctaaatat tggatgttgc ttggatatta tgatgggaa agccgcggc	300
gcagtttgc ttgggtgtgg ccttcttcg atgggctcgg gtagtgcgca tcaactaag	360
ttgccagagc agttggtcac ggcacgtggt acgggttctg tgccgttgc tggcgatatt	420
tcgggtgtcg gtaaaacgccc tggtcaggtt cagggaaatta ttaaaggccg cctgaaaaaa	480
atggccaatc agccacaagt gatgggtcggt ttgggtcgaga ataatgcggc gaatgtgtcg	540
gtgattcggt ctgggaatag tggcgatgt ccgctgacgg cagccggtaa gcgtgtgttgc	600
gatgcgggttgc ctgcggtagg tggtcaacg gcaaatgtgc aggatacgaa tggcagctg	660
acacgtggca atgttagtacg aactgttgc ttggaaaggatt tagttgcggaa tccgcgacaa	720
aatatttgc tgcgtcgcc tgatgtgggtt accatgatta ccaatcccta tacctttacg	780
tctatgggtg cgggtgggag aacacaagaa atcgggtttt cagccagagg cttatcgctt	840
tctgaagcca ttggccgtat gggcggtttt caagatcgcc gttctgtatgc gcgtgggtgt	900
tttgtgttcc gctatacgcc atgggtggaa ttgcggcag aacgtcagga taaatggatt	960
gctcaagggtt atggcagtga ggcagagatt ccaacggat atcgtgtgaa tatggctgat	1020
gcccatttcgc tattttctat gcagcgctt cctgtgaaga ataaagatgt attgtatgtg	1080
tcgaatgcgc cggtggctga agtgcagaaa ttctgtcgt ttgtgttctc gccgggttacc	1140
agtggcgca acagtattaa taatttaact aattaa	1176

<210> 14
<211> 391
<212> PRT
<213> Neisseria meningitidis

<400> 14

Met Phe Lys Val Lys Phe Tyr Ile Arg His Ala Val Leu Leu Cys		
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20 25 30		
Ala Lys Ile Val Ser Leu Gly Gln Gln Ser Glu Val Gln Ile Pro		
35 40 45		
Glu Val Glu Leu Ile Asp Val Asn His Thr Val Ala Gln Leu Leu Tyr		
50 55 60		
Lys Ala Gln Ile Asn Gln Ser Phe Thr Gln Phe Gly Asp Gly Tyr Ala		
65 70 75 80		
Ser Ala Gly Thr Leu Asn Ile Gly Asp Val Leu Asp Ile Met Ile Trp		
85 90 95		
Glu Ala Pro Pro Ala Val Leu Phe Gly Gly Gly Leu Ser Ser Met Gly		
100 105 110		
Ser Gly Ser Ala His Gln Thr Lys Leu Pro Glu Gln Leu Val Thr Ala		
115 120 125		
Arg Gly Thr Val Ser Val Pro Phe Val Gly Asp Ile Ser Val Val Gly		
130 135 140		
Lys Thr Pro Gly Gln Val Gln Glu Ile Ile Lys Gly Arg Leu Lys Lys		
145 150 155 160		
Met Ala Asn Gln Pro Gln Val Met Val Arg Leu Val Gln Asn Asn Ala		

	165	170	175
Ala Asn Val Ser Val Ile Arg Ala Gly Asn Ser Val Arg Met Pro Leu			
180	185	190	
Thr Ala Ala Gly Glu Arg Val Leu Asp Ala Val Ala Val Gly Gly			
195	200	205	
Ser Thr Ala Asn Val Gln Asp Thr Asn Val Gln Leu Thr Arg Gly Asn			
210	215	220	
Val Val Arg Thr Val Ala Leu Glu Asp Leu Val Ala Asn Pro Arg Gln			
225	230	235	240
Asn Ile Leu Leu Arg Arg Gly Asp Val Val Thr Met Ile Thr Asn Pro			
245	250	255	
Tyr Thr Phe Thr Ser Met Gly Ala Val Gly Arg Thr Gln Glu Ile Gly			
260	265	270	
Phe Ser Ala Arg Gly Leu Ser Leu Ser Glu Ala Ile Gly Arg Met Gly			
275	280	285	
Gly Leu Gln Asp Arg Arg Ser Asp Ala Arg Gly Val Phe Val Phe Arg			
290	295	300	
Tyr Thr Pro Leu Val Glu Leu Pro Ala Glu Arg Gln Asp Lys Trp Ile			
305	310	315	320
Ala Gln Gly Tyr Gly Ser Glu Ala Glu Ile Pro Thr Val Tyr Arg Val			
325	330	335	
Asn Met Ala Asp Ala His Ser Leu Phe Ser Met Gln Arg Phe Pro Val			
340	345	350	
Lys Asn Lys Asp Val Leu Tyr Val Ser Asn Ala Pro Leu Ala Glu Val			
355	360	365	
Gln Lys Phe Leu Ser Phe Val Phe Ser Pro Val Thr Ser Gly Ala Asn			
370	375	380	
Ser Ile Asn Asn Leu Thr Asn			
385	390		

<210> 15
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 <212> DNA
 <213> Neisseria meningitidis

<400> 15

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 <212> PRT
 <213> Neisseria meningitidis

<400> 16

Met Asn Met Lys Lys Trp Ile Ala Ala Leu Ala Cys Ser Ala Leu			
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20	25	30	
Ala Asn Pro Asp Lys Val Tyr Arg Val Ala Ser Asn Ala Glu Phe Ala			

35	40	45
Pro Phe Glu Ser Leu Asp Ser Lys Gly Asn Val	Glu Gly Phe Asp Val	
50	55	60
Asp Leu Met Asn Ala Met Ala Lys Ala Gly Asn Phe Lys Ile Glu Phe		
65	70	75
Lys His Gln Pro Trp Asp Ser Leu Phe Pro Ala Leu Asn Asn Gly Asp		80
85	90	95
Ala Asp Val Val Met Ser Gly Val Thr Ile Thr Asp Asp Arg Lys Gln		
100	105	110
Ser Met Asp Phe Ser Asp Pro Tyr Phe Glu Ile Thr Gln Val Val Leu		
115	120	125
Val Pro Lys Gly Lys Lys Ile Ser Ser Ser Glu Asp Leu Lys Asn Met		
130	135	140
Asn Lys Val Gly Val Val Thr Gly Tyr Thr Gly Asp Phe Ser Val Ser		
145	150	155
Lys Leu Leu Gly Asn Asp Asn Pro Lys Ile Ala Arg Phe Glu Asn Val		160
165	170	175
Pro Leu Ile Ile Lys Glu Leu Glu Asn Gly Gly Leu Asp Ser Val Val		
180	185	190
Ser Asp Ser Ala Val Ile Ala Asn Tyr Val Lys Asn Asn Pro Thr Lys		
195	200	205
Gly Met Asp Phe Val Thr Leu Pro Asp Phe Thr Thr Glu His Tyr Gly		
210	215	220
Ile Ala Val Arg Lys Gly Asp Glu Ala Thr Val Lys Met Leu Asn Asp		
225	230	235
Ala Leu Lys Lys Val Arg Glu Ser Gly Glu Tyr Asp Lys Ile Tyr Ala		240
245	250	255
Lys Tyr Phe Ala Lys Glu Asp Gly Gln Ala Ala Lys		
260	265	